THE AUTOMOTIVE EDGE™

08.14

The Official Publication of the
NATIONAL LOCKSMITH AUTOMOBILE ASSOCIATION™

2013 Toyota 4 Runner

The Toyota "G" transponder, over the TR47 keyway is common to many 2010+ vehicles, it is repeated in the 2013 4Runner. The 4Runner uses the new Cut Spacing convention (paired wafers). This article will illustrate the opening procedure, disassembly, cylinder removal and methods for originating a "first key" for this vehicle.

The 2013 4Runner (SR5) has four lock cylinders. There is a cylinder in the drivers' door, Ignition, Glove Box, and Rear Hatch. The ignition cylinder will contain tumblers in positions 1-10. The door cylinder contains tumblers in positions 3-10. The glove box cylinder contains tumblers in positions 7-10, plus a wafer at the tip, which is the "V" Valet tumbler. The rear hatch cylinder contains tumblers in

Issue
No. 151

Here's a great website for Automotive Locksmiths:

www.TheNationalLocksmith.com

Chat, Forums, Editorial,
Online Store, Tech Support

positions 3-10. There is provision for a "V" Valet tumbler in the hatch cylinder, but no wafer was found in this position. All cylinders are "keyed-alike," from the factory. The TR47 key normally carries ten bitting positions and a "Tip" Valet position. The fastest and most satisfactory method of making these keys has been to remove the door cylinder to make a working door key from the code found on this cylinder. "Sight Reading" the door cylinder is extremely difficult, as these cylinders employ the "stepped wafer ear" to disguise the bitting heights. Picking to decode (using a Lishi 2-in-1 pick decoder) plus code search or progression may also be viable solution, but the code is on the cylinder, and it is easier removed than picking to decode. The door cylinder can be easily removed from the outside the door. It is unnecessary to remove the door trim panel or remove the handle assembly to free the door cylinder. The code is stamped on the side of the cylinder. Codes were not found on any other cylinders. The ignition cylinder is "column mounted," with an active retainer.

National Locksmith Automobile Association™

Publisher
Marc Goldberg

Director
Greg Mango

Printed in the U.S.A.
NLAA, a division of the
National Publishing Company
Publishers of
THE NATIONAL LOCKSMITH

1533 Burgundy Parkway
Streamwood, Illinois 60107
Phone 630-837-2044
Fax 630-837-1210

E-mail address:
nlaa@thenationallocksmith.com

Unsolicited manuscripts are accepted, but must include SASE.

©2014 National Publishing Co.
All rights reserved.

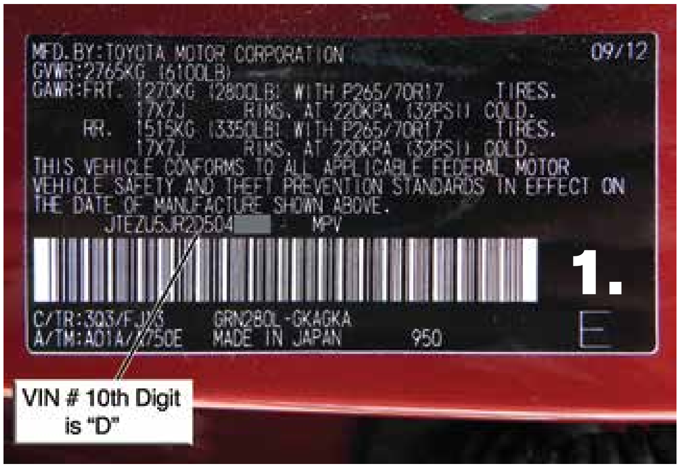
Issue No. 151

Manufacturers: Interested in offering rebates or discounts to NLAA members? Contact Marc Goldberg at the Home Office

The first step in any service procedure must be to determine the "model year" of the vehicle. The 10th digit of the VIN number will reveal the model year. The VIN number will be found on a sticker label in the driver's door channel. The "Date of Manufacture" (upper right corner) is "09/12." This may be important on vehicles that have a variant "upgrade or update" during the model year. (The last four digits of the VIN number have been obscured for security reasons.) The 10th digit of the Vin is a "D." This is a 2013 model vehicle. *(See Figure 1.)*

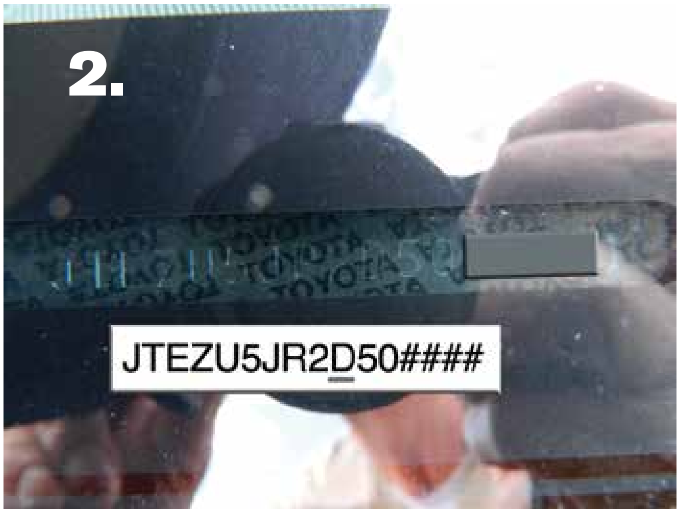
A metal tag, in the lower left corner of the windshield also shows the VIN number for this vehicle. The 10th digit of the VIN number is "D," confirming this to be a 2014 model auto. *(See Figure 2.)*

From the Fast Facts "index," we find Key Plate "TO18," for the 2010-2014 FJ Cruiser. This Key Plate applies to the majority of the 2010+ Toyota Vehicles that use the TR47 key blade and "G" transponder. The Key plate shows: tumbler locations, depth and



MFD.BY:TOYOTA MOTOR CORPORATION 09/12
GVWR:2765KG (6100LB)
GAWR:FRT. 1270KG (2800LB) WITH P265/70R17 TIRES.
17X7J RIMS, AT 220KPA (32PSI) COLD.
RR. 1515KG (3350LB) WITH P265/70R17 TIRES.
17X7J RIMS, AT 220KPA (32PSI) COLD.
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
JTEZU5JR2D504[redacted] MPV
C/TR:3Q3/FJ13 GRN280L-GKAGKA
A/TM:A01A/A750E MADE IN JAPAN 950
E

1.



2.

space information, code series and the correct key blade for this vehicle. The key shown is the Toyota original (non-IKT) blank. ILCO and Jet "head styles" may vary. The only difference is the corporate "Head Mark."

From the Fast Facts™ Key Plate we find:

Code Series: 50000-69999

Keys: OEM# 89785-08040, ILCO: TOY44G-PT & Jet: TR52G-PHT

Work Key: X217, X225 & TR47

Key is Gauged: Tip Gauged

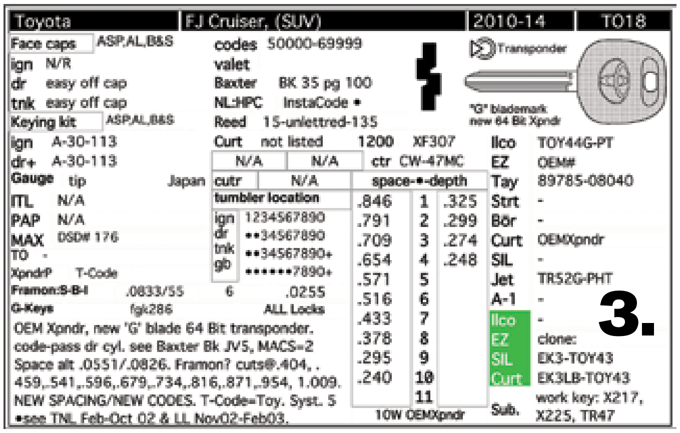
Space		Depth	
1-	.846	1-	.325
2-	.791	2-	.299
3-	.709	3-	.274
4-	.654	4-	.248
5-	.571		
6	.516	the step increment is: .0255	
7-	.433		
8-	.378		
9-	.295		
10-	.240		

Tumbler Locations

Ignition:	1-10
Door:	3-10
Trunk (Rear Hatch)	3-10+ (+ = Valet tumbler)
Glove Box:	7-10+ (+ = Valet tumbler)

Other important key making information is found on this Key Plate, but the above is the most important, along with the key making suggestions in the lower left corner of the plate. Most important is; "code-pass dr cyl." The code is found on the passenger door cylinder. *(See Figure 3.)*

3.



Toyota | FJ Cruiser, (SUV) | 2010-14 | TO18

Face caps ASP,AL,B&S
ign N/R
dr easy off cap
tnk easy off cap
Keying kit ASP,AL,B&S
ign A-30-113
dr+ A-30-113
Gauge tip Japan
ITL N/A
PAP N/A
MAX DSD# 176
TO -
XpndrP T-Code
Framon:S-B-I .0833/55 6 .0255
G-Keys fgk286 ALL Locks
OEM Xpndr, new 'G' blade 64 Bit transponder. code-pass dr cyl. see Baxter Bk JV5, MACS=2 Space alt .0551/.0826. Framon? cuts@.404, .459,.541,.596,.679,.734,.816,.871,.954, 1.009. NEW SPACING/NEW CODES. T-Code=Toy. Syst. 5 •see TNL Feb-Oct 02 & LL Nov02-Feb03.

codes 50000-69999
valet
Baxter BK 35 pg 100
NL:HPC InstaCode •
Reed 15-unlettred-135
Curt not listed 1200 XF307
N/A N/A ctr CW-47MC
cutr N/A

tumbler location
ign 1234567890
dr ••34567890
tnk ••34567890+
gb ••••••7890+

space	•-depth	
.846	1	.325
.791	2	.299
.709	3	.274
.654	4	.248
.571	5	
.516	6	
.433	7	
.378	8	
.295	9	
.240	10	
	11	

10W OEMXpndr

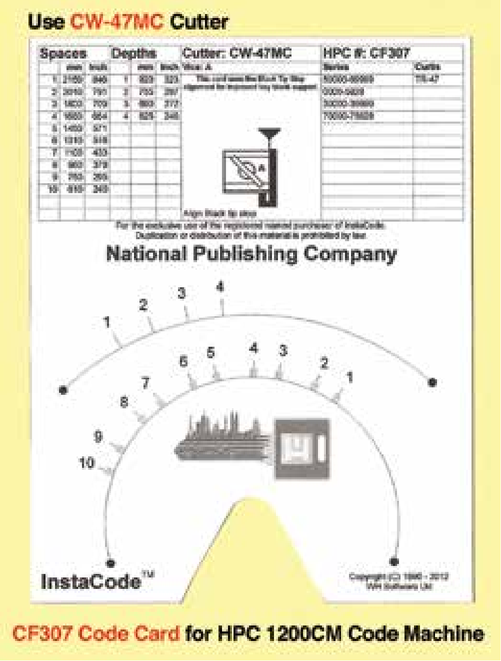
Transponder
"G" blademark new 64 Bit Xpndr

Ilco	TOY44G-PT
EZ	OEM#
Tay	89785-08040
Strt	-
Bör	-
Curt	OEMXpndr
SIL	-
Jet	TR52G-PHT
A-1	-
Ilco	-
EZ	clone:
SIL	EK3-TOY43
Curt	EK3LB-TOY43
Sub.	work key: X217, X225, TR47

If you will be making this key on a Framon #2 Code Machine, the "Framon Spacing" specifications are given in the information block of the Fast Facts Key Plate.

The Fast Facts Key Plate calls for HPC 1200CM Code Card #XF307. The CF307 Card is the same. It was printed from the InstaCode Code Program. This card requires the CW-47MC cutter. *(See Figure 4.)*

4.



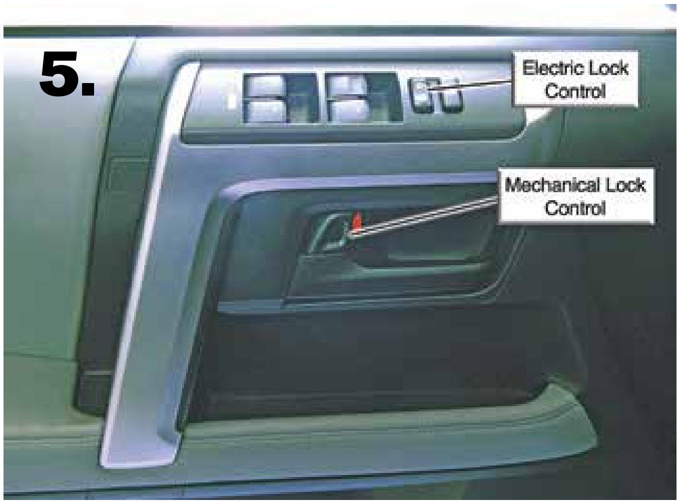
Use CW-47MC Cutter

Spaces Depths Cutter: CW-47MC HPC #: CF307

National Publishing Company

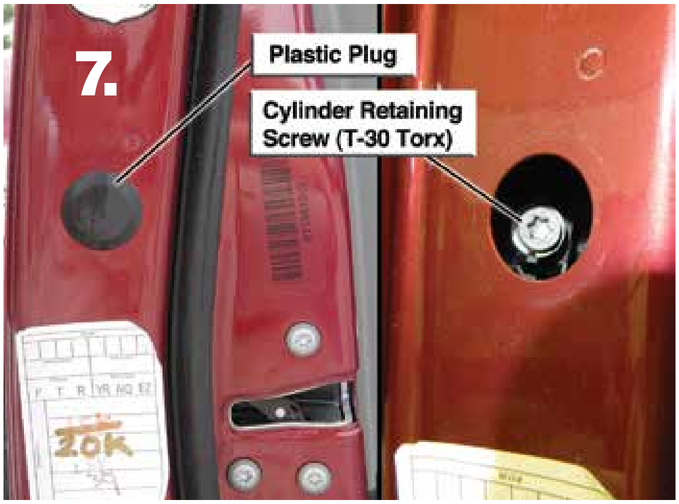
InstaCode™

CF307 Code Card for HPC 1200CM Code Machine

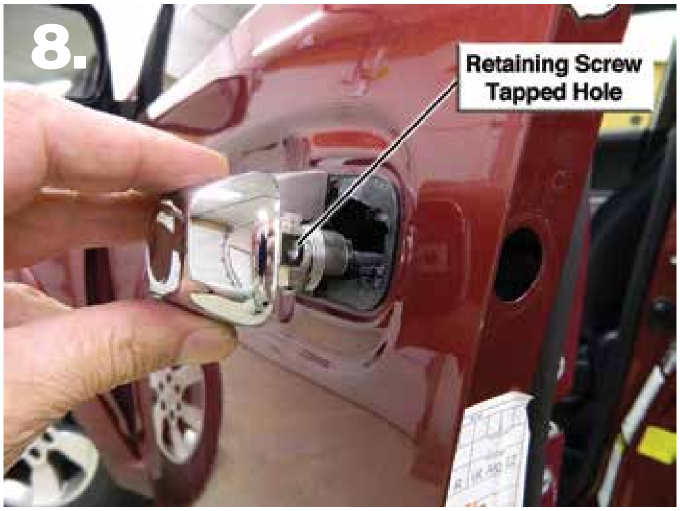


A horizontal “rocker style” lock button (mechanical lock control) is located above the latch release handle in the door. Carefully wedge the top rear corner of the door with an “air-wedge” to create an opening for a “long-reach” opening tool. Drag the button rearward to unlock the door. Alternately, it is possible to press the electric lock control button, to unlock the vehicle. If the vehicle is running, press one of the window control buttons to run a window down. *(See Figure 5.)*

6.



7.



8.

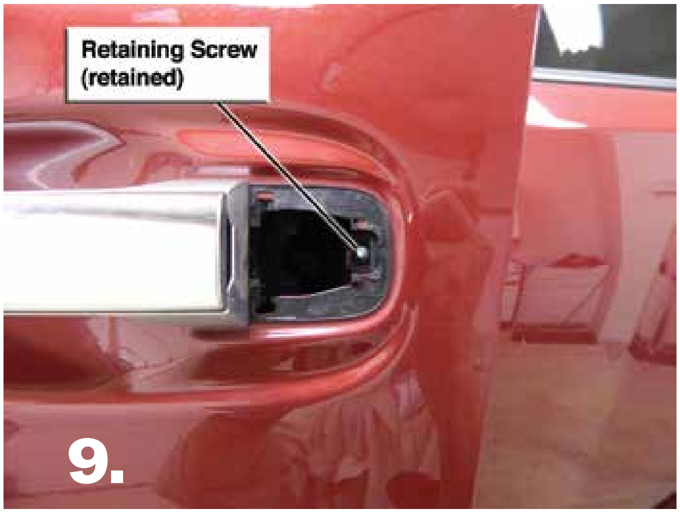
The door cylinder is incorporated into the drivers door pull handle trim. It is retained by a screw fastener, accessible from the rear edge of the door. The trim is plastic. *(See Figure 6.)*

The rear edge of the drivers’ door shows a Plastic Plug. Remove the plug to reveal the Cylinder Retaining Screw. A T-30 Torx driver will loosen this screw to free the door cylinder. The screw head is retained in the plastic housing, to prevent its complete removal. Do not “remove” the screw from the door. *(See Figure 7.)*

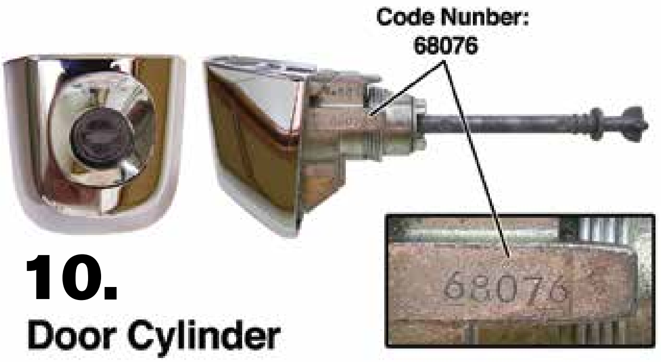
When the screw is backed out far enough to release the cylinder, it can be easily removed. Carefully remove the door cylinder. *(See Figure 8.)*

This shows the location of the cylinder Retaining Screw. *(See Figure 9.)*

With the cylinder removed, the code is easily located on the rib of the cylinder body. The Code is: 68076. A quick code “look-up” will find the



9.



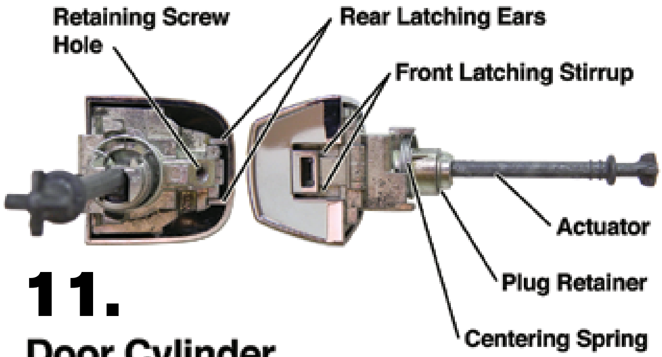
10.

Door Cylinder

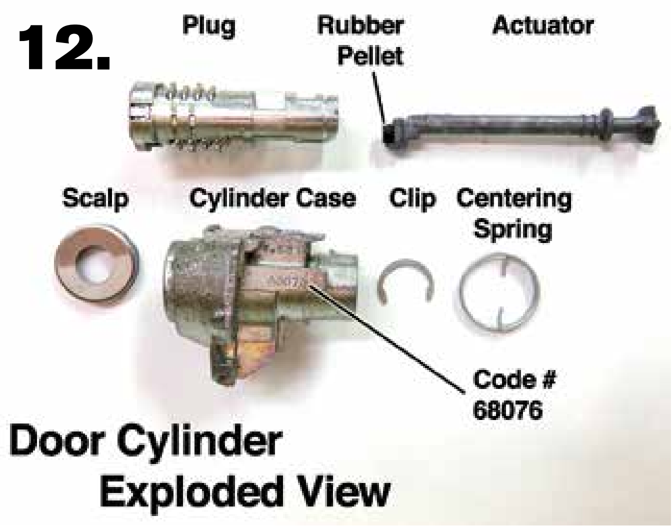
bitting: 4334233221. Cut this key using the CF307 Code Card and CW-47MC Cutter to complete the mechanical portion of the key making process. If the combination has been changed or the code number cannot be found continue, to disassemble the cylinder. *(See Figure 10.)*

The plastic cylinder trim is retained by three trim latches. The front latch is a stirrup catch. Carefully lift the stirrup with a small flat-blade screwdriver to disengage the front latch. Lift the trim at the front to disengage the rear latch ears. Remove the plastic trim. Remove the Plug Retainer and Centering Spring. An "easy-off" chrome Scalp is pried off the front of the cylinder to free the plug for removal. The wafers are not retained in the plug, so use care as you remove the Plug. *(See Figure 11.)*

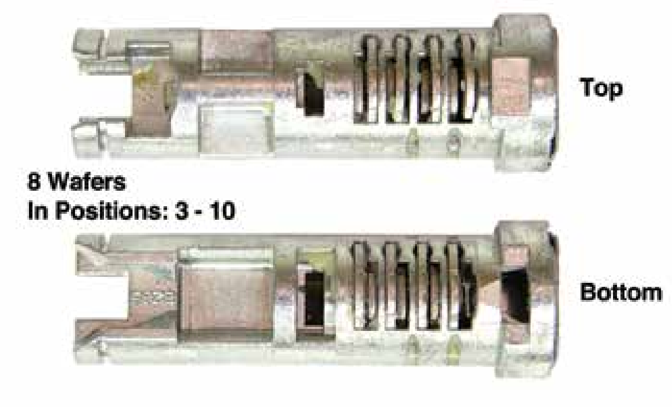
This is an exploded view of the door cylinder components. Notice the Rubber Pellet at the front of the actuator. It holds the actuator in alignment as it is inserted into the door latch assembly. It is also an "anti-rattle" component. Don't forget to replace it, as you see, when the cylinder is reassembled. *(See Figure 12.)*



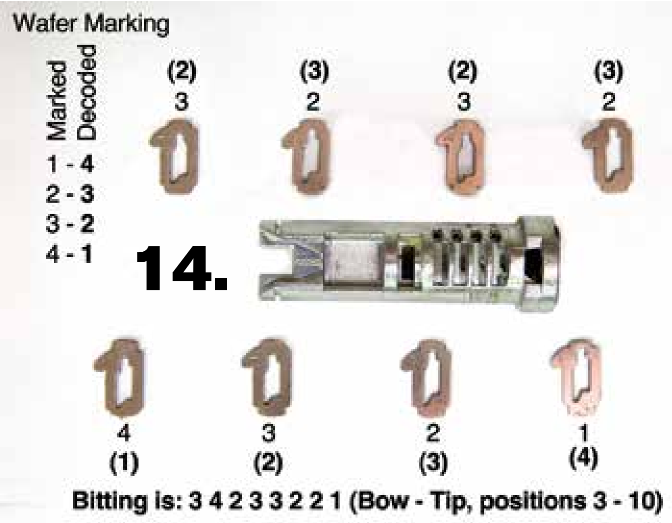
11. Door Cylinder Scalp Removal



12. Door Cylinder Exploded View



Door Cylinder Plug Detail **13.**

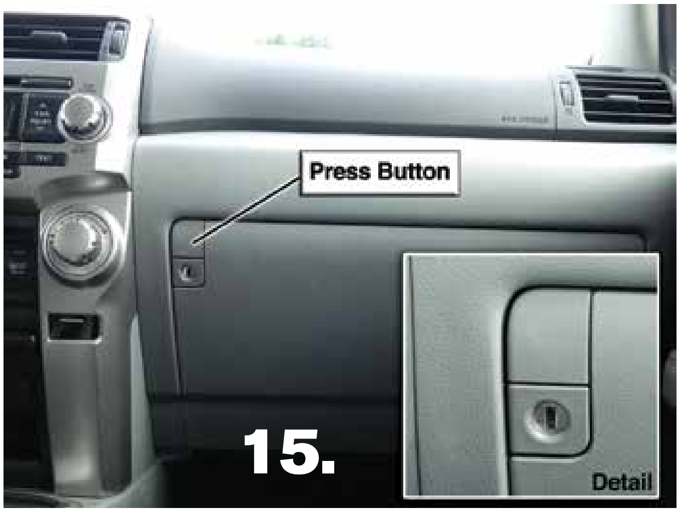


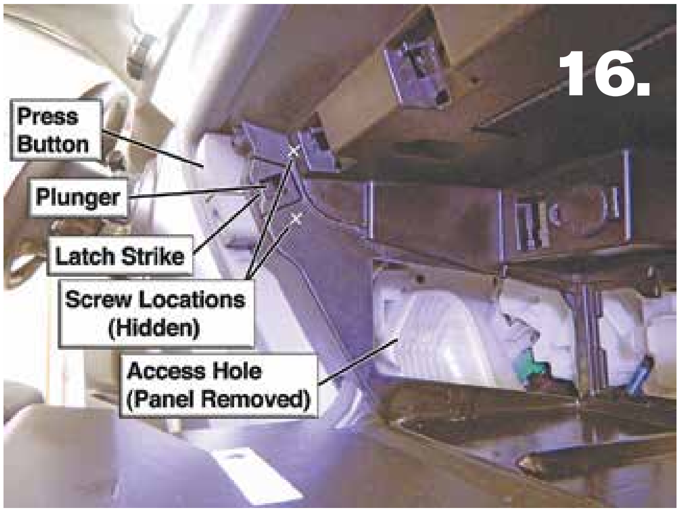
14. Bitting is: 3 4 2 3 3 2 2 1 (Bow - Tip, positions 3 - 10)

The door cylinder has 8 wafers, in positions 3-10. Note the "paired-wafer" configuration. Wafers 3/4, 5/6, 7/8 and 9/10 share wafer compartments in the plug. *(See Figure 13.)*

The wafers are numbered to indicate the correct bittings. The numbering, however, is "backwards." A tumbler labeled "1," will use a #4 bitting depth (deepest). A tumbler labeled "4," will use a #1 bitting depth (shallowest). This shows a simple conversion table for converting the labeled numbers to the correct bitting depths. The top and bottom wafers are arranged to show their positions in the plug. They are labeled to indicate their number and Bitting. The Bitting for this cylinder is 3 4 2 3 3 2 2 1, from Bow to Tip, for positions 3-10. *(See Figure 14.)*

Using the above bittings and the "missing cut" utility of the InstaCode program the code series returns nine (9) possible bitting combinations





to complete the key. This may be an option for completing the key.

The Glove Box lock is mounted to the dash, and is located at the top left corner of the glove box. The Glove box is secured by spring latch bolts at the top left and right sides of the lid. The latches are interconnected. Compressing either latch-bolt retracts the opposite latch also. The cylinder is shown in the "Unlocked" position. Right rotation of the plug locks the Press Button. *(See Figure 15.)*

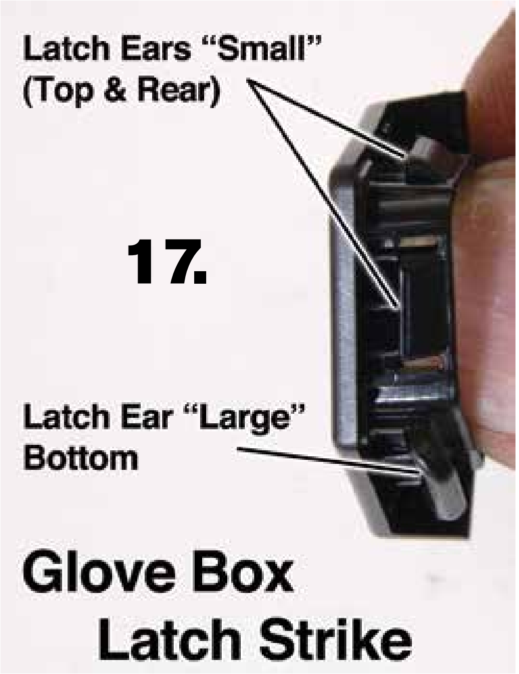
This shows the glove box lock, in the dash. The Press Button causes the Plunger to rise out of the Latch Strike when it is depressed. When the glove box is locked, the Press Button is prevented from being pushed down. When the Plunger rises, it compresses both spring latches on the glove box lid. The lid will spring open and allow access. *(See Figure 16.)*

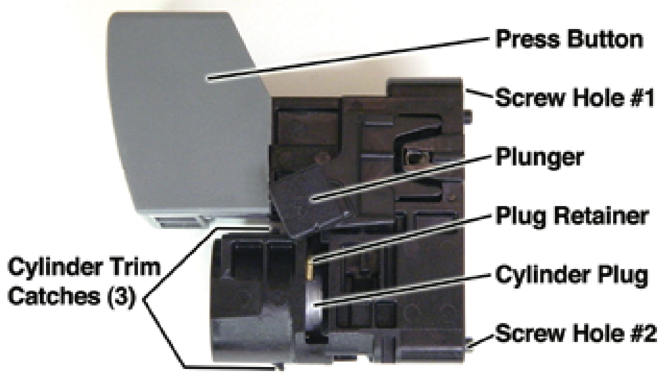
The lock assembly is attached to a metal framework behind the dash by two Philips Head sheet metal screws. The location of the screws is indicated in the photo. A cover conceals the Access Hole in the left side of the glove box. Remove the cover to reach behind the dash and remove the two attachment screws. This will require a stubby #2 Philips screwdriver and a ratcheting offset screwdriver. It's a tight squeeze, but it can be done. Remove the Latch Strike before you begin.

When the screws are removed, pull the lock assembly forward. Carefully pull out on the plunger, as you rotate the lock assembly to the right It will come out easily. Nothing has to be bent, pried or distorted. It's kind-of a puzzle, but it comes out easily.

This is the Latch Strike. These little plastic pieces are surprisingly difficult to remove. Pry down at the top of the Latch Strike to dislodge the Top and Rear "Small Latch Ears." The Strike will tilt out of its hole as you lift it to dislodge the Bottom Larger Latch ear. Replace by hooking the bottom ear into the hole and tilting it into place to engage the top and rear latch ears. This will prevent damage to the strike. *(See Figure 17.)*

This shows the Glove Box Lock. The Press Button actuates the Plunger. Screw Holes at the rear accept the attachment screws, to secure the lock to the "metal dash frame." The Cylinder Plug is retained in the assembly by the Plug Retainer. This retainer can only be depressed in the "Unlocked" position. If the cylinder is in the locked position it must be picked "left" to the unlocked position.





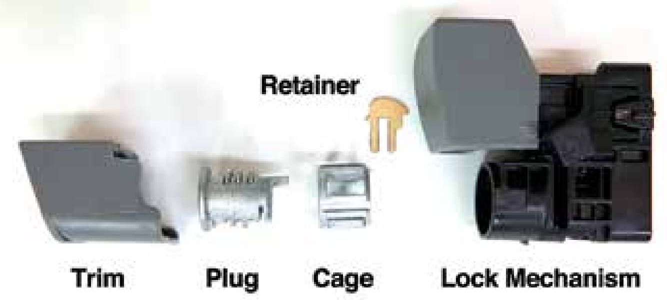
Glove Box Lock (cylinder trim removed)

18.

There are five active tumblers in this lock. *(See Figure 18.)*

The plastic Cylinder Trim Piece (next photo) is secured to the lock by three trim catches. Pry up the top catches (2) then pry down the single catch at the bottom to release and remove the trim cover. Depress the Plug retainer to slide the cylinder out of the Lock Mechanism.

An Exploded View of the Glove Box Lock. The components are: The Trim, the Plug, The Cylinder Cage, the Retainer and the Lock Mechanism. The Retainer must be removed to allow the Plug to be slid out of the Cylinder Cage. The wafers are marked with the "coded" bitting depths. (See Figure 14, to reverse the numbers and find the bitting depths) These wafers are "not retained." Disassemble the cylinder carefully. *(See Figure 19.)*

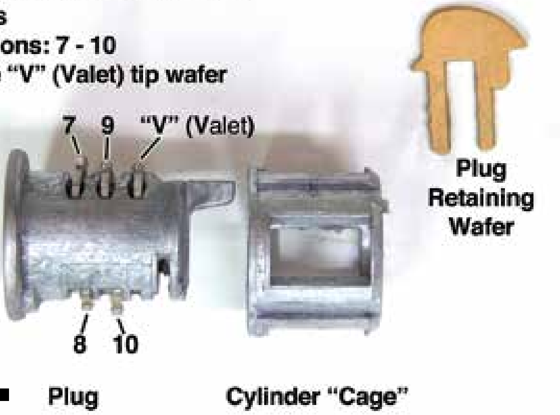


Glove Box Lock Exploded View

19.

The Glove Box cylinder contains wafers in positions 7-10 and has a "V" (Valet) wafer that engages the "pre-cut" #2 depth at the tip of the key. Do not confuse the "Valet" wafer with the 10th position of the key. *(See Figure 20.)*

Glove Box Cylinder



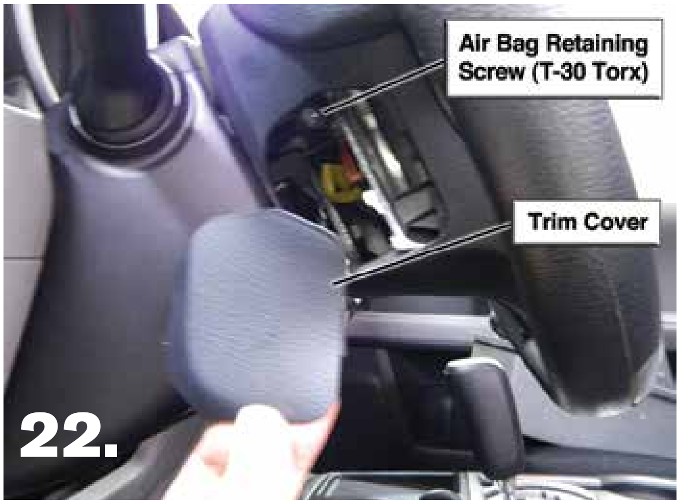
20.

Using the above bittings (7-10) and the "missing cut" utility of the InstaCode program the code series returns one hundred eighty-nine (189) possible bitting combinations to complete the key. If we only search using positions 3-10, the number falls to twenty-four (24) possibilities. This probably is not a viable option for completing the key. No code was found on this cylinder.

21.

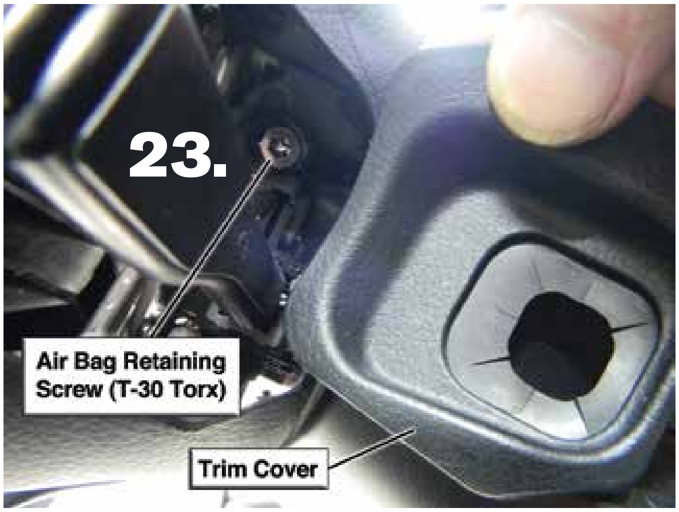
The ignition cylinder is mounted at the right side of the steering column. The two-part column trim shell, which surrounds the column, has no obvious attachment screws. The shells are held in place by two Philips head trim screws "behind the steering wheel." If the Ignition fails, the wheel cannot be rotated to access the trim screws. The steering wheel will have to be removed. *(See Figure 21.)*

Remove the Plastic Trim Cover from the left side of the steering wheel trim. This will expose the Air



22.

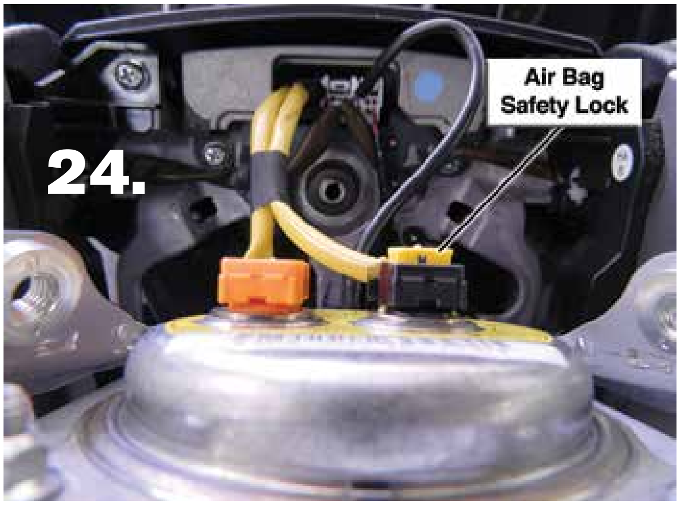
Bag Retaining Screw. A T-30 Torx driver is used to remove the screw from the Air Bag frame. The screw is retained in the wheel hub by a plastic cage. Do not remove the screw from the wheel hub. *(See Figure 22.)*



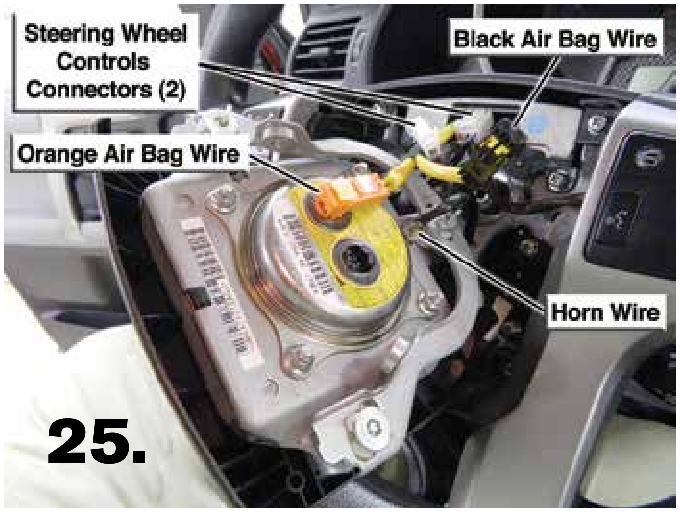
23.

Remove the Plastic Trim Cover from the right side of the steering wheel trim. Slide the Trim Cover up and off the windshield-wiper control arm. This will expose the right Air Bag Retaining Screw. A T-30 Torx driver is used to remove the screw from the Air Bag frame. The screw is retained in the wheel hub by a plastic cage. Do not remove the screw from the wheel hub. *(See Figure 23.)*

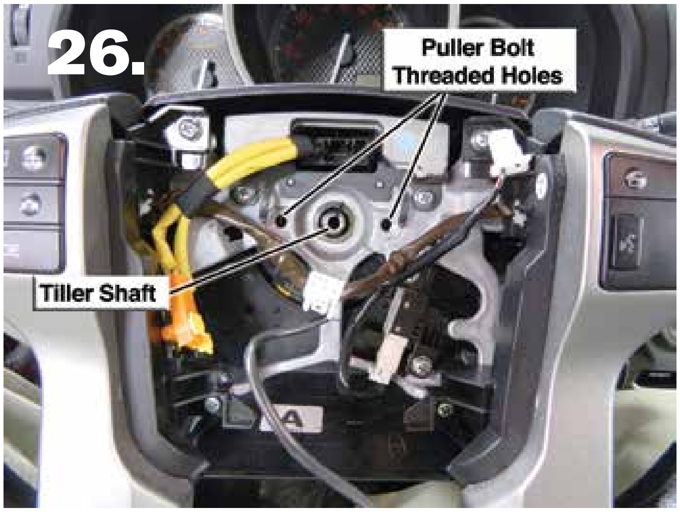
Safety First! Disconnect the Battery and allow a fifteen-minute wait before attempting to disconnect the Air Bag. *(See Figure 24.)*



24.



25.

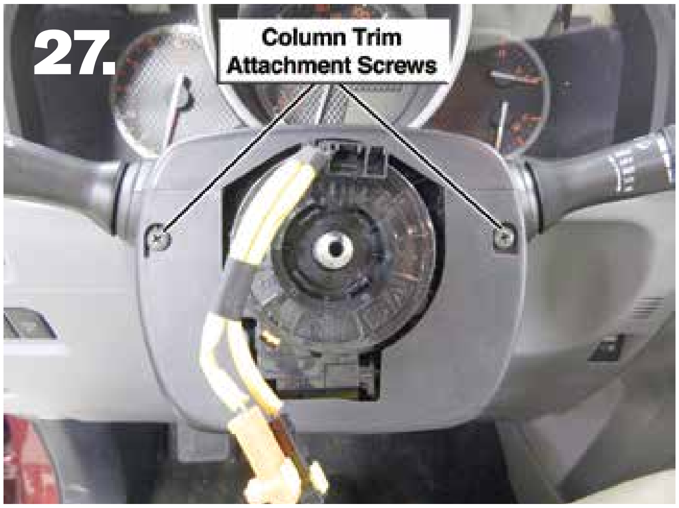


26.

Carefully disconnect the Air Bag control wires. The "Safety Lock" connectors have a small plastic clip that locks them in position. Raise the clips, to release the plugs. Remove the Black and Red (Orange) control wires. Disconnect the single black "Horn Wire" last. This will free the Air Bag from the steering wheel and column.

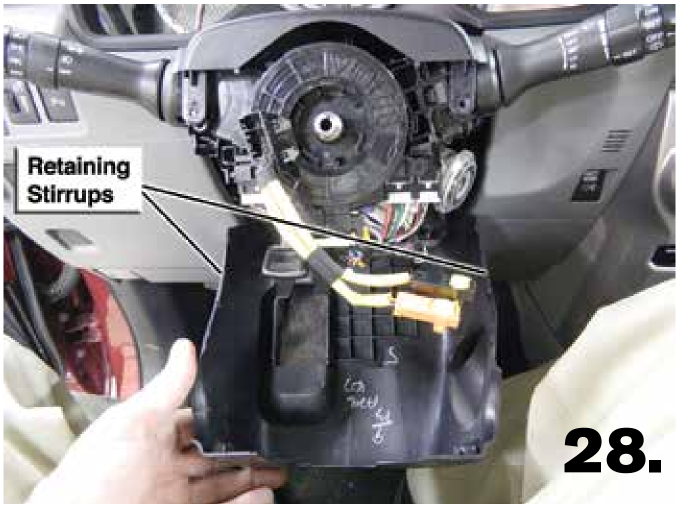
Separate the Air Bag and place it in a secure area of the vehicle, away from the working area. Identifying the various connectors under the air bag.

This vehicle has a number of electrical controls for the phone and radio. Disconnect the Steering Wheel Control Connectors (2). The control harness will stay with the wheel as it is removed. *(See Figure 25.)*

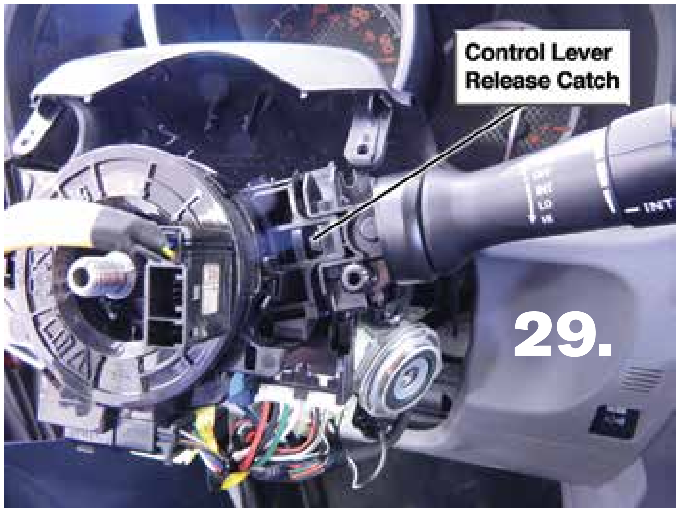

27.

This is the location of the steering wheel Puller Bolt Holes. The hub is retained by a 19mm metric nut. Use a socket wrench to remove this nut. Use a universal wheel puller and metric puller bolts to remove the wheel. *(See Figure 26.)*

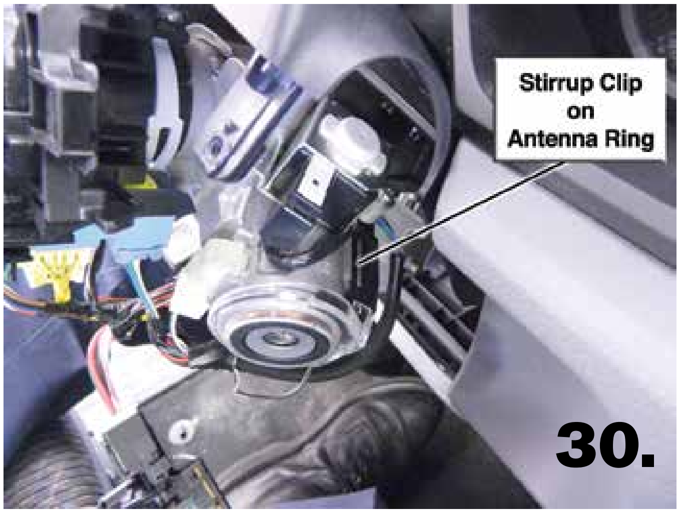
There is no "center punched" Head Marker on the tiller shaft or wheel hub. You will notice that we have marked the top of the tiller shaft and the wheel hub with a Sharpie Marker, to insure accurate placement when we reassemble the steering wheel. Mark the shaft and wheel hub before you proceed.


28.

When the wheel is free, lift the wheel and carefully feed the Air Bag Control wires through the opening in the wheel hub. Set the wheel aside.


29.

The Column Trim Attachment Screws. Remove the screws to free the column trim halves. Do Not rotate the Air Bag control "clock spring" plastic rotor out of position. *(See Figure 27.)*


30.

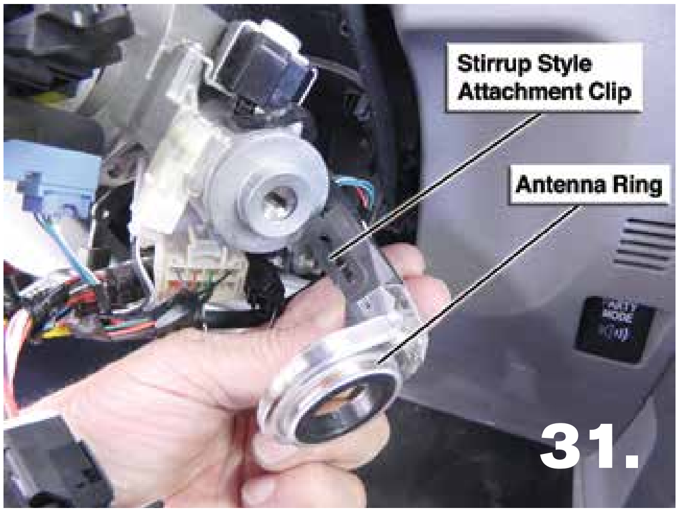
The column trim halves are locked together by "Retaining Stirrup" clips at the left and right sides of the shells. The stirrups are on the lower shell half. Press inward at the indicated points to unlatch them without damage. Release and drop the lower half away from the column. The upper shell is attached to the dash by leather "light shield." Hinge it up and away from the column, but do not remove it from the dash. *(See Figure 28.)*

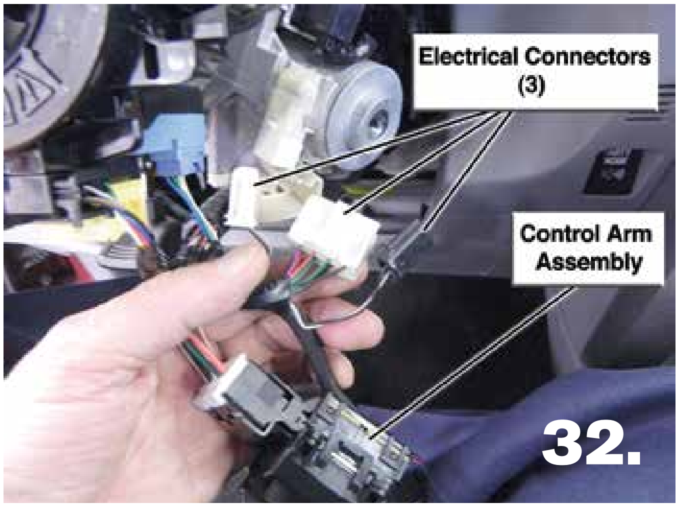
This column has a removable "modular" switch for the windshield control switch. Depress the Control Lever Release Catch and slide the control out of its socket. Allow it to hang from the wire harness or unplug it and set it aside. It has been removed to allow easier access to the ignition. *(See Figure 29.)*

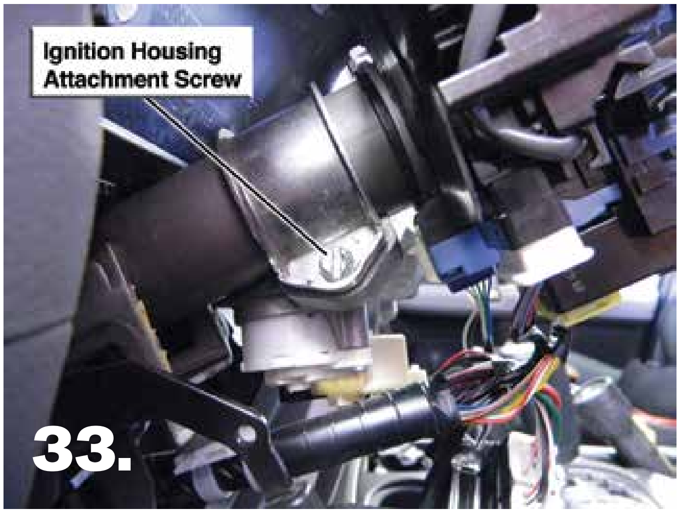
The Antenna Ring and Amplifier Module is attached to the ignition housing by two Stirrup Clips. Carefully lift the stirrups off the stirrup rails of the ignition housing and slide the Antenna Ring off the front of the ignition cylinder. *(See Figure 30.)*

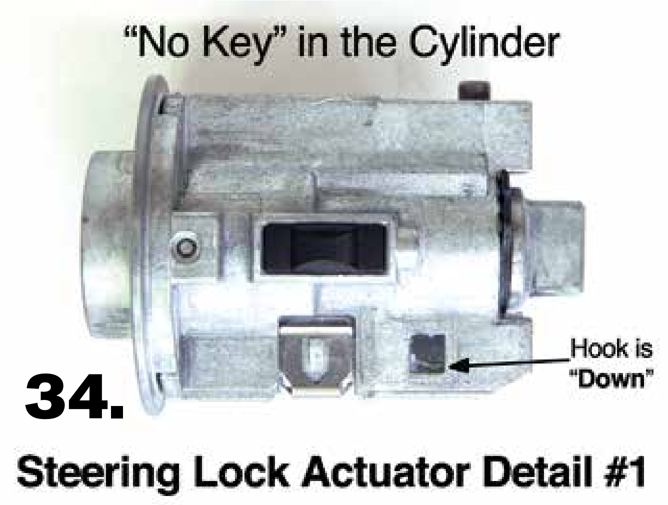
The Antenna Ring and Module separated from the ignition housing. When replacing the antenna, simply slide it over the nose of the ignition and snap it in place. No attachment screws are used on this antenna. Allow it to hang from the wire harness and continue. *(See Figure 31.)*

There are three locking electrical connectors connected to the ignition housing. They are: the large ignition control connector, the white key alarm connector and the transmission interlock solenoid connector. Release each and remove them from the ignition housing. Allow them to hang below the dash with the antenna ring and wiper control arm. *(See Figure 32.)*







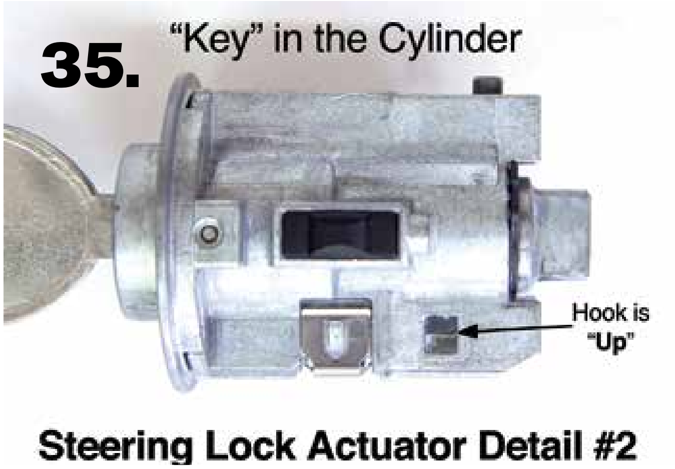


The Ignition Housing is attached to the steering column post by a saddle strap and a single "headless" security bolt. Chase the bolt counterclockwise with a prick punch and hammer to loosen and remove the screw. The screw head modified for reassembly. Slot the screw, as you see, and replace it using a large screwdriver or screwdriver socket. *(See Figure 33.)*

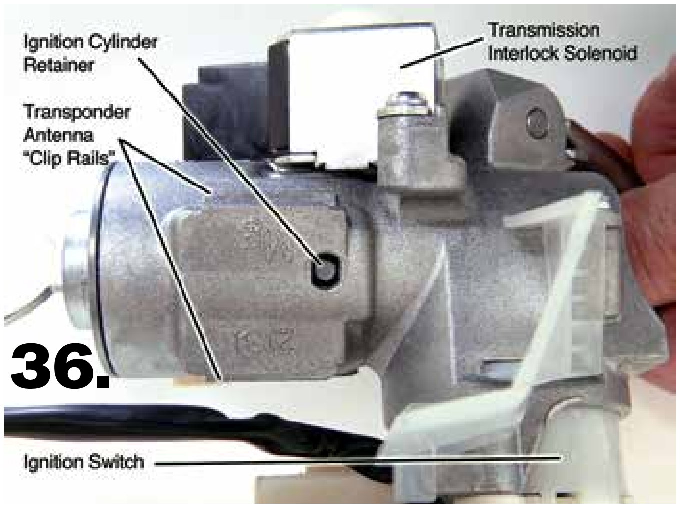
Before we can remove this ignition, we need to understand how it operates. The ignition cylinder "with no key in the keyway. A "Hook" is incorporated into the cylinder body. With no key in the keyway, the Hook will be down, as you see in the photo. *(See Figure 34.)*

When a key is inserted, the front of the Hook is pushed away (down), against a spring tension. The Hook is levered "up." The hook is "spring loaded," and not fixed. As the ignition plug is rotated out of position, (to the Accessory or On/Run position) the steering lock bolt will be pulled up. This is part of

35.



36.


Ignition Cylinder Retainer
Transponder Antenna "Clip Rails"
Transmission Interlock Solenoid
Ignition Switch

the cam action of the housing. The Hook "captures" the steering lock bolt in the "retracted" position. It cannot release the bolt until the plug is rotated back to the key-pull position and removed. *(See Figure 35.)*

This presents a problem. The key must be in the "accessory" position to depress the cylinder retainer. Once depressed it will slide out about ½" and be prevented from complete removal by the Hook engagement with the steering lock bolt.

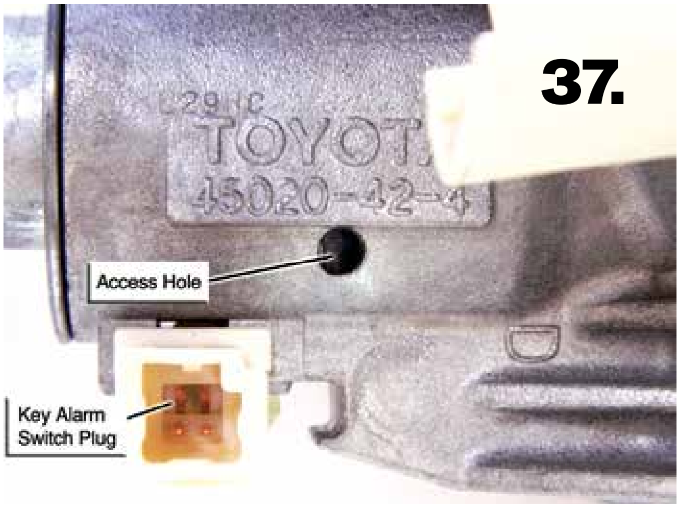
To complete the ignition removal, a pick is inserted into a separate hole in the housing to lift the Hook (push it down) and release the steering lock bolt.

The Ignition Cylinder Retainer hole is located under the Antenna Ring Module. We must remove the antenna Ring to access the retainer. The Transponder Antenna "Clip Rails." The Cylinder Retainer is shown in the access hole. Rotate the ignition to the Accessory Position to depress the retainer and pull the ignition cylinder out about ½". *(See Figure 36.)*

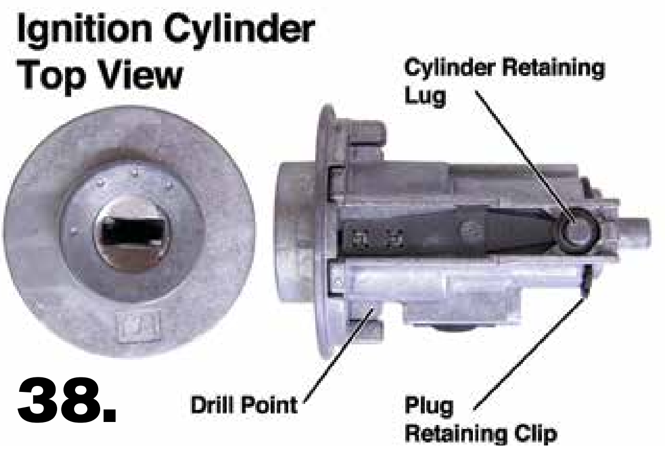
This will bring the port in the side of the ignition cylinder into alignment with the access hole in the bottom of the ignition housing. The access hole is on the bottom of the ignition housing. Insert a "straight pick" or "Ice Pick" tool into the access hole and pry the hook down "gently." A "Click" will be heard as the spring loaded steering bolt is released. The ignition will be free to be removed out the front of the housing. *(See Figure 37.)*

The Front and Top views of the ignition cylinder. The Cylinder Retaining Lug (Pin) is the "active" cylinder retainer. It can only be depressed with the plug in the accessory position. The Plug Retaining Clip retains the Plug in the Cylinder. The Scalp is retained by two solid retaining pins. To remove the scalp, these pins must be lifted (not Removed) from the cylinder body. The drill point is indicated for the pin forward of the anti-rattle rubber pad. Drill a 3/32" hole through the cylinder case and slightly behind center, at the location of the retaining pin.

37.



38.



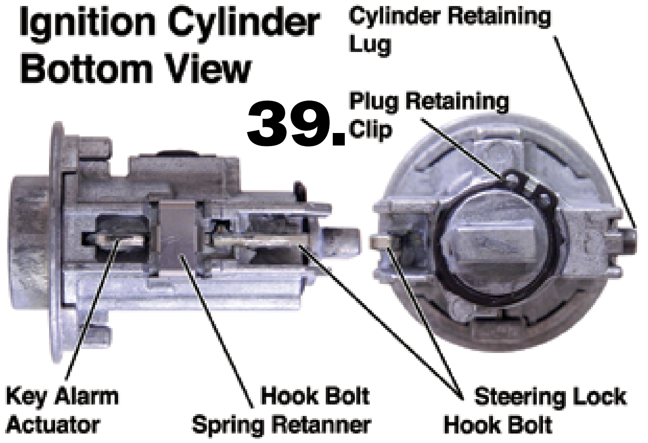
Lift the pin using a small sharp "scriber." A scriber point will be harder than an Ice Pick and will dig into the side of the pin and lift it easily. If the scriber point breaks, replace it. Use the smallest hole and do the least damage to the cylinder. The pin socket on the opposite side is open to the rear. Use a sharp flat blade screwdriver to lift the pin away from the cylinder. The Scalp will be free to be removed. *(See Figure 38.)*

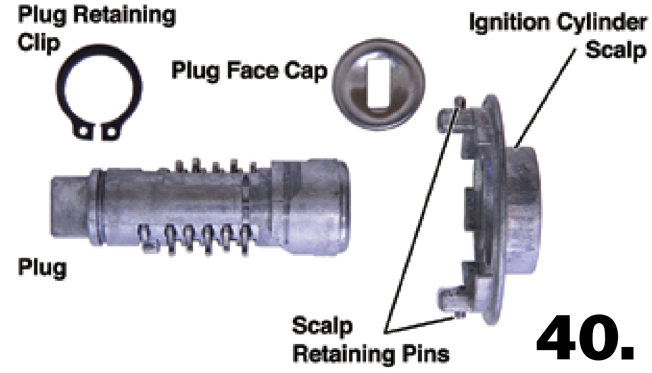
The Rear and Bottom views of the ignition cylinder. These views show the Hook Bolt and Hook Bolt Spring Retainer. As the key is inserted, the front of the Hook Bolt is pushed upward. It actuates the Key Alarm switch at the front and prepares the hook bolt to capture the steering Lock bolt at the rear. This is a very clever mechanism. *(See Figure 39.)*

If the cylinder is damaged or cannot be rotated to the accessory position, remove the top of the Cylinder Retaining Pin with a carbide burr and Dremel Tool. Eat the top of the pin away with the burr to free the ignition for removal. Replace the ignition or use a socket head "set screw" (Allen Screw) in the Ignition Housing to hold the ignition in place. Remove and discard the remnant of the Cylinder Retaining Lug.

Ignition Cylinder Bottom View

39.

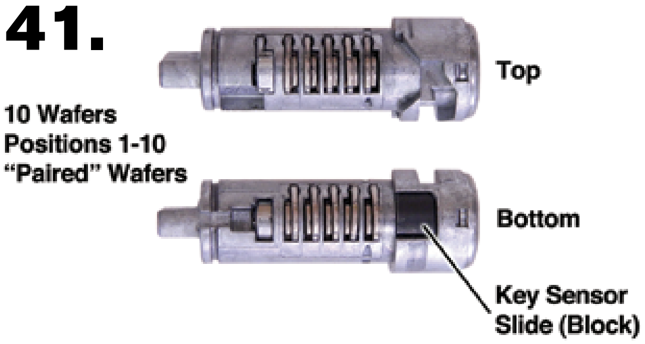




40.

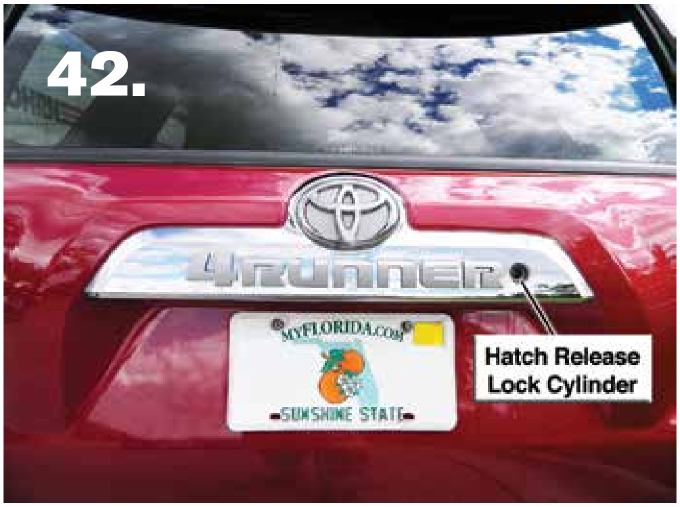
Ignition Cylinder Components

41.



Ignition Cylinder Plug Detail

42.

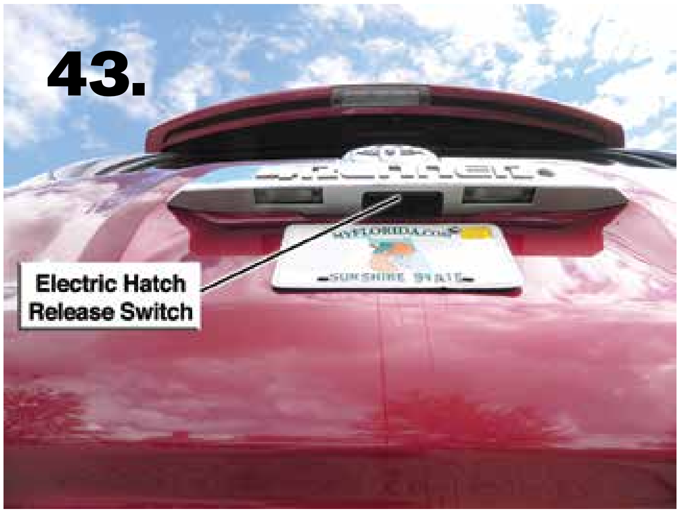


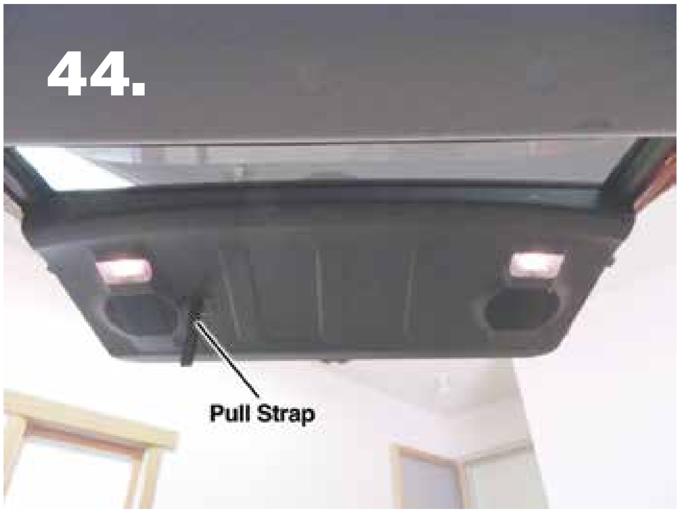
An Exploded View of the Ignition Cylinder. The Scalp Retaining Pins have been raised to allow the Scalp to be removed without removing them. A Chrome Plug Face Cap is captive between the Scalp and the head of the Plug. *(See Figure 40.)*

Top and Bottom views of the Ignition Plug. The Bottom View shows the metal Key Sensor Slide (Block), at the front of the Plug. This Slide lifts the front of the Hook Bolt. *(See Figure 41.)*

The Ignition Cylinder has 10 wafers, in positions 1-10. As with all of the cylinders on this vehicle, they are "Paired" wafers.

The Rear Hatch Release Cylinder is mounted under the chrome license plate light trim. This cylinder has no mechanical connection to the latch release. It is an electrical switch only. It enables or disables the electric release under the center of the same trim piece. If the battery is dead or the latch





release solenoid fails, a plastic trim cover on the inside of the hatch can be removed to access the rear of the latch mechanism. The latch can then be released from inside. *(See Figure 42.)*

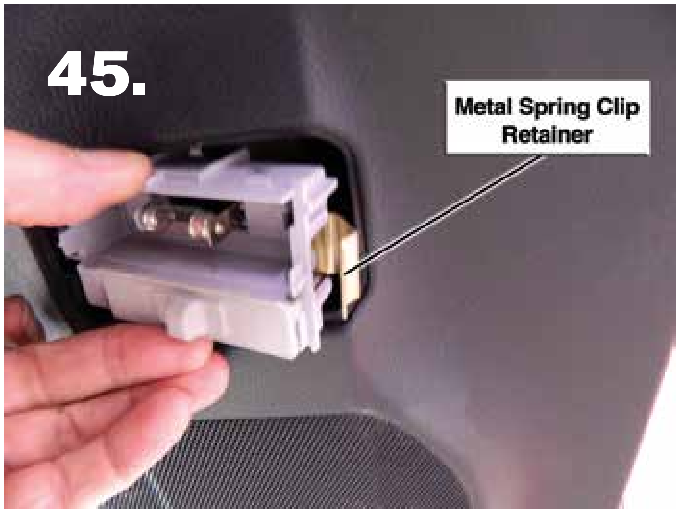
The Electric Hatch Release Switch is located under the center of the license plate light trim. When the vehicle is unlocked, the switch will be active. When the vehicle is locked, the switch is deactivated. *(See Figure 43.)*

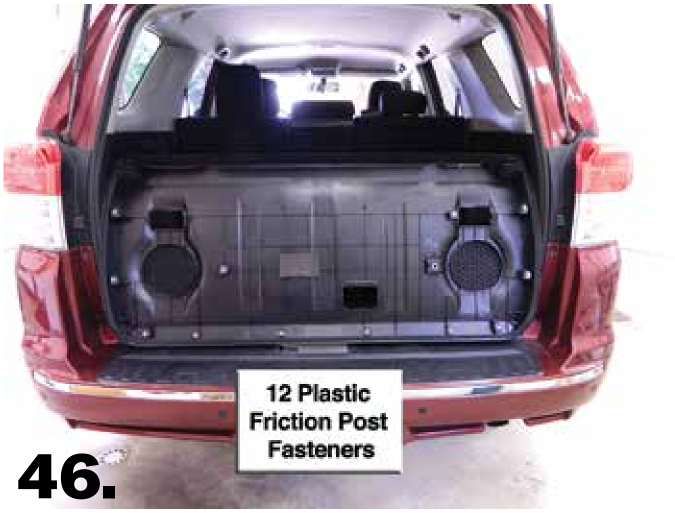
The Rear Hatch Cylinder is removed through the inside of the hatch. The Plastic trim panel is secured by 12 friction post catches and one 10mm hex head screw, which also attaches the Pull Strap to the inside of the Hatch. Remove the plastic trim cover beneath the Pull Strap to reveal the 10mm attachment Screw. Remove the screw and Pull Strap. *(See Figure 44.)*

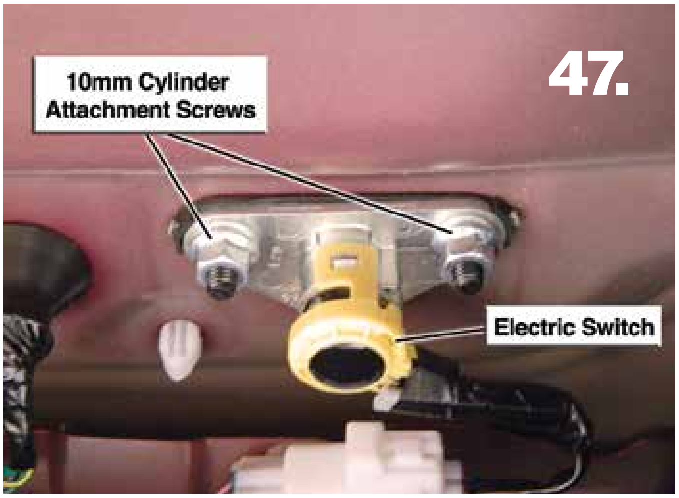
To prevent damage and stress to the wire harness the courtesy lamps should be removed and disconnected from the door trim before it is removed. They are retained by a Metal Spring Clip on one side and plastic hook ears on the opposite side. Push the spring clip inward to release the lamp housing. Tilt it out of the hole and release the locking wire connector to separate it from the hatch door. Remove both courtesy lamps. *(See Figure 45.)*

The rigid plastic trim panel is retained by 12 Plastic Friction Post Fasteners. Start at the bottom right corner of the panel. Pry up and release the fasteners. An arrow and design pry point is indicated on the outside rim of the trim panel. Plastic hooks along the top of the panel hold it in place under the glass. Lift the trim to free it from the Hatch Door. Here you see the underside of the trim panel and the locations of the Friction Post Fasteners. *(See Figure 46.)*

Carefully separate the plastic moisture seal from the inside of the hatch frame to reveal the Hatch Lock Cylinder. The cylinder is attached by two

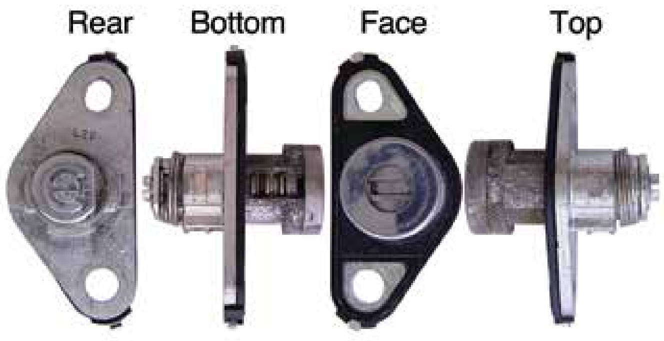






10mm Attachment screws. Carefully remove the electric switch from the rear of the lock cylinder. Note that there is no mechanical lock linkage from this cylinder to the latch. Remove the 10mm hex nuts to disassemble the lock cylinder from the hatch body. *(See Figure 47.)*

This shows all views of the Rear Hatch Cylinder. Remove the Plug Retaining Clip, Washer and Centering Spring. Hold the cylinder in one hand, with the cylinder cap facing up. Bring it down sharply on a padded surface to dislodge and remove the cylinder cap. It's easier than trying to pry the cap off, and will not damage the cylinder. Be careful not to eject the plug from the cylinder, as the wafers "are not retained." Alternately, you can carefully pry up and remove the cap. The cap is an "easy-off" design, and will be reused when we reassemble the cylinder. *(See Figure 48.)*



Hatch Cylinder Assembly 48.

The Hatch Cylinder Components in an exploded view. *(See Figure 49.)*

The Hatch Cylinder Plug detail. There are eight (8) wafers in positions 3-10. The wafer compartment

The National Locksmith®

CERTIFICATION PROGRAM

Since 1929, *The National Locksmith* has been known as The Ultimate Technical resource for the locksmith. It is that expertise we deliver to you in this exclusive certification program.

- Designed and written by locksmiths, for locksmiths.
- Test wherever you want, whenever you want.
- The *only* certification program of its type carrying The National Locksmith's Seal of Approval.
- The most cost effective way to show your customers the industry recognition you have earned.

Details available at www.TheNationalLocksmith.com
630-837-2044

OID 0911

The National Locksmith®

Guide to Motorcycles

VOLUMES 1-7

by John Blankenship

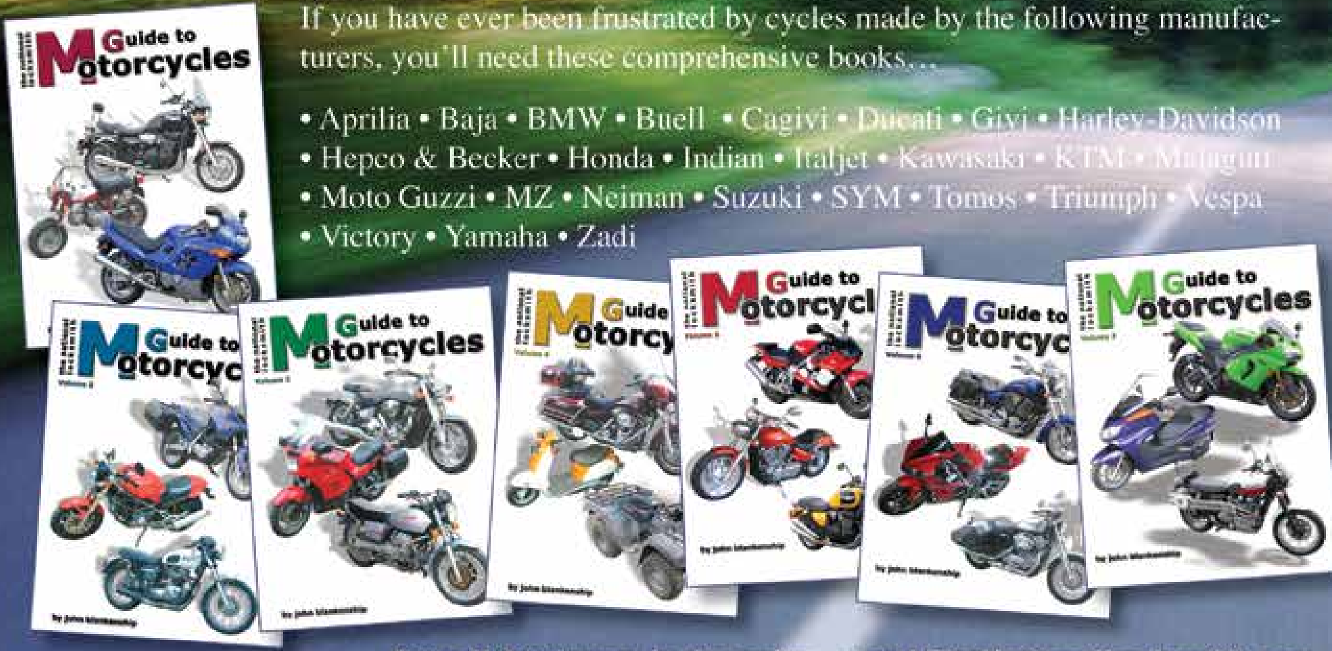
Choose Book OR CD-ROM

For years locksmiths have begged for comprehensive service manuals on motorcycles, and they are finally here! Covering a wide range of service procedures, you'll know everything a locksmith needs to know about each cycle. Plus, you'll get step by step photographs and instructions.

NEW! Volume 7

If you have ever been frustrated by cycles made by the following manufacturers, you'll need these comprehensive books...

• Aprilia • Baja • BMW • Buell • Cagivi • Ducati • Givi • Harley-Davidson
• Hepco & Becker • Honda • Indian • Italjet • Kawasaki • KTM • Malaguti
• Moto Guzzi • MZ • Neiman • Suzuki • SYM • Tomos • Triumph • Vespa
• Victory • Yamaha • Zadi



CID 0508

Buy all 7 volumes in the online store! TheNationalLocksmith.com

☐ Any Single Volume	$99.00 + $8 s/h
☐ Any Two Volumes	$149.00 + $8 s/h
☐ Any Three Volumes	$199.00 + $8 s/h
☐ Any Four Volumes	$249.00 + $8 s/h
☐ Any Five Volumes	$299.00 + $8 s/h
☐ Any Six Volumes	$359.00 + $8 s/h
☐ All 7 Volumes	$419.00 + $8 s/h

Choose your volumes...

☐ Volume 1 ☐ Volume 2 ☐ Volume 3 ☐ Volume 4
☐ Volume 5 ☐ Volume 6 ☐ Volume 7 ☐ All 7 Volumes

Please choose a format: ☐ **Book** ☐ **CD-ROM**

(U.S add $8 s/h per order. Foreign add $20 s/h per order. Orders must be paid in U.S. funds.)

I've enclosed a check or money order for $________

OR charge my ☐ VISA ☐ MasterCard ☐ Discover ☐ American Express

Credit Card #

Expiration Date Security Code

Signature

Name

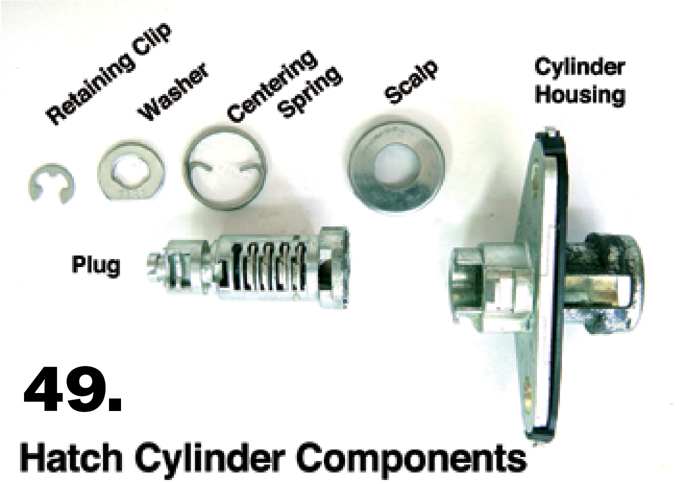
Shop Name

Address (No P.O. Boxes)

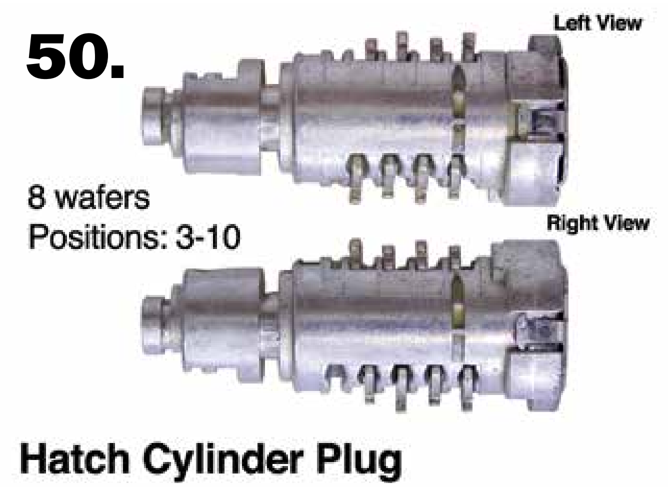
City State Zip

Phone

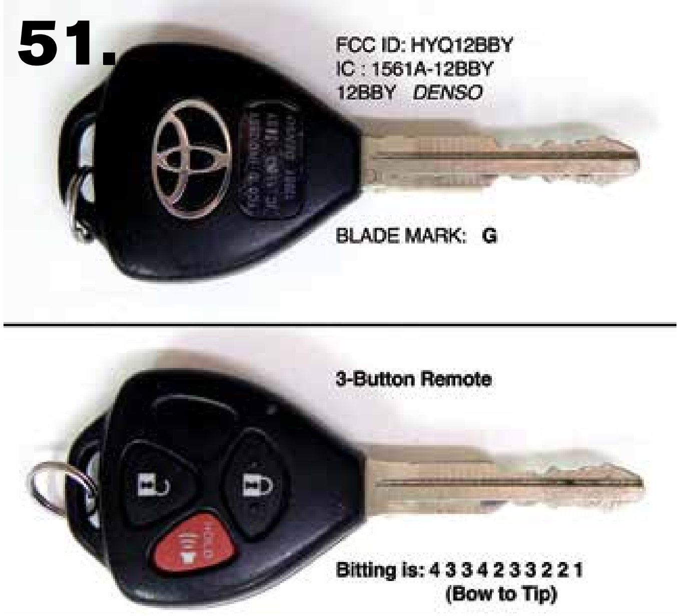
Mail Coupon & payment to: The National Publishing Co. • 97592 Eagle Way • Chicago, IL 60678-9750



49.
Hatch Cylinder Components



50.
Hatch Cylinder Plug



51.

at the rear of the plug would accommodate a "V" (Valet) wafer. This cylinder had no wafer in the Valet position. *(See Figure 50.)*

This is the OEM Toyota IKT head key. This is a three button remote. The FCC ID information is shown above the key. The key will be blade marked "G." This transponder is used in a number of other Toyota vehicles, but the IKT section is unique to the 2010-13 4Runner and 2011-13 RAV4. *(See Figure 51.)*

Transponder Programming

This vehicle uses a Texas Instruments 64 Bit Encrypted transponder system.

- Keys must be "Blade Marked" G. No other keys will substitute.
- The Dealer "G" key is Part Number 89785-08040.
- Advanced Diagnostics T-Code and MVP Pro, use software ADS-174.
- The 4Runner to 2013 uses the Type 5 system.
- PIN number is required with dealer tool.
- There is no OBP (Onboard Programming Procedure), that I know of.
- Clone, using the ILCO RW4 Plus and EK3-TOY43 or EK3LB-TOY43 key.

This vehicle was a pleasure to service, and should pose no special problems for the professional locksmith.

"With the right tools, and the right training, they're all easy."

■